

DOBASHI -- 10/091,569
Attorney Docket: 008312-0290757

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1.-4. (Canceled)

5. (Original) A face image recognition apparatus comprising: a memory in which a reference feature amount of a face of a to-be-recognized person is previously registered and a new reference feature amount can be additionally registered,

an image input section which inputs a face image of a person,

a feature amount extracting section which extracts a feature amount of a face based on the face image input by said image input section,

a recognition section which performs a first determining process for determining a recognition rate between the feature amount extracted by said feature amount extracting section and the reference feature amount previously registered in said memory when a new reference feature amount is not additionally registered in said memory, performs a second determining process for determining a recognition rate between the feature amount extracted by said feature amount extracting section and a new reference feature amount additionally registered in said memory when the new reference feature amount is additionally registered in said memory, and performs a third determining process for determining the recognition rate between the feature amount extracted by said feature amount extracting section and the reference feature amount previously registered in said memory when the recognition rate determined by the second determining process is lower than a preset value, and

a feature amount adding section which performs a first additional registration process for additionally registering the feature amount extracted by said feature amount extracting section as a new reference feature amount into said memory when the recognition rate determined by the first determining process of said recognition section is lower than a preset value and performs a second additional registration process for deleting the new reference feature amount which is already additionally registered in said memory and additionally registering the feature amount extracted by said feature amount extracting section as a new reference feature amount into said memory when the recognition rate determined by the second determining process of said recognition section is lower than a preset value and the

DOBASHI -- 10/091,569
Attorney Docket: 008312-0290757

recognition rate determined by the third determining process of said recognition section is lower than a preset value.

6.-9. (Canceled)

10. (Original) A passage control apparatus which recognizes a face image of a passer and controls the passage of the passer, comprising:

a memory in which a reference feature amount of a face of a person who is permitted to pass through is previously registered and a new reference feature amount of the face of the person who is permitted to pass through can be additionally registered,

an image input section which inputs a face image of a person,

a feature amount extracting section which extracts a feature amount of a face based on the face image of the passer input by said image input section,

a recognition section which performs a first determining process for determining a recognition rate between the feature amount extracted by said feature amount extracting section and the reference feature amount previously registered in said memory when a new reference feature amount is not additionally registered in said memory, performs a second determining process for determining a recognition rate between the feature amount extracted by said feature amount extracting section and a new reference feature amount additionally registered in said memory when the new reference feature amount is additionally registered in said memory, and performs a third determining process for determining the recognition rate between the feature amount extracted by said feature amount extracting section and the reference feature amount previously registered in said memory when the recognition rate determined by the second determining process is lower than a preset value, and

a feature amount adding section which performs a first additional registration process for additionally registering the feature amount extracted by said feature amount extracting section as a new reference feature amount into said memory when the recognition rate determined by the first determining process of said recognition section is lower than a preset value and performs a second additional registration process for deleting the new reference feature amount which is already additionally registered in said memory and additionally registering the feature amount extracted by said feature amount extracting section as a new reference feature amount into said memory when the recognition rate determined by the second determining process of said recognition section is lower than a preset value and the

DOBASHI -- 10/091,569
Attorney Docket: 008312-0290757

recognition rate determined by the third determining process of said recognition section is lower than a preset value.

11.-12. (Canceled)

13. (Original) A face image recognition method used in a face image recognition apparatus including a memory in which a reference feature amount of a face of a to-be-recognized person is previously registered and a new reference feature amount can be additionally registered, comprising:

inputting a face image of a person,

extracting a feature amount of a face based on the input face image,

determining a recognition rate between the feature amount extracted by the feature amount extracting section and the reference feature amount previously registered in the memory when a new reference feature amount is not additionally registered in the memory,

additionally registering the feature amount extracted from the input face image as a new reference feature amount into the memory when it is determined in said determining step that the recognition rate between the feature amount extracted from the input face image and the reference feature amount previously registered in the memory is lower than a preset value,

determining a recognition rate between the feature amount extracted from the input face image and a new reference feature amount additionally registered in the memory when the new reference feature amount is additionally registered in the memory,

determining the recognition rate between the feature amount extracted from the input face image and the reference feature amount previously registered in the memory when it is determined in said determining step that the recognition rate between the feature amount extracted from the input face image and the new reference feature amount additionally registered in the memory is lower than a preset value, and

deleting the new reference feature amount which is already additionally registered in the memory and additionally registering the feature amount extracted from the input face image as a new reference feature amount into the memory when it is determined in said determining step that the recognition rate between the feature amount extracted from the input face image and the new reference feature amount additionally registered in the memory is lower than a preset value and the recognition rate between the feature amount extracted

DOBASHI -- 10/091,569
Attorney Docket: 008312-0290757

from the input face image and the reference feature amount previously registered in the memory is lower than a preset value.